

Policy:	202013	Initial Effective Date:	06/11/2020
SUBJECT:	Vertebral Body Tethering	Annual Review Date:	07/12/2024
		Last Revised Date:	07/12/2024

Prior approval is required for some or all procedure codes listed in this Corporate Medical Policy.

Definition: Scoliosis is a musculoskeletal disorder that is characterized by abnormal or exaggerated lateral curvature of the spine. Scioliotic curves may consist of a single curve or of 2 curves. Treatment options may include observation, bracing, or surgery. Spinal fusion surgery may be recommended for severe scoliosis but carries its own risks such as arrested growth and limited mobility in the fused region. Vertebral body tethering (VBT) is a less invasive approach that involves placing screws along the spine that are tethered to each other with a flexible plastic cord. Tension is created along the outside of the curve, aiming to slow growth in this area while facilitating growth along the inside of the curve. This approach harnesses the patient's own spinal growth to slowly straighten the curve without need for surgery. This is a new technique and research is limited, particularly regarding long-term outcomes.

Medical Necessity: The Company considers VBT (**CPT Codes 0656T, 0657T, 22836, 22837, 22838, 22899**[†], **relevant ICD-10 procedure codes**[†]) for treatment of progressive idiopathic scoliosis to be **medically necessary** and eligible for reimbursement providing that *all* of the following medical criteria are met:

- Patient is a suitable candidate for VBT^{††}; and
- Patient is not skeletally mature; and
- Major Cobb angle of 30 to 65 degrees; and
- Osseous structure is dimensionally adequate to accommodate screw fixation; and
- Bracing has failed or the patient is intolerant to wear.

[†]When *unlisted procedure, spine* (CPT Code 22899) or a relevant ICD-10 procedure code is determined to be VBT.

^{††}A surgeon experienced in VBT **must** have conducted an in-**person examination** and evaluated the patient's suitability for VBT, and the rationale for VBT is documented and available for review. The surgeon conducting the procedure **must** have experience with the technique, and the procedure **must** be undertaken at a facility with appropriate experience and expertise in VBT.

IMPORTANT NOTES:

• Revision, replacement, or removal of VBT (**CPT Code 0790T**) is considered **medically necessary** when there are complications associated with the device (for example, tether breakage or overcorrection).

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• The Company considers VBT (CPT Codes 0656T, 0657T, 0790T, 22836, 22837, 22838, 22899[†], relevant ICD-10 procedure codes[†]) for patients that do not meet the above criteria to be investigational and not eligible for reimbursement.

Documentation Requirements:

The Company reserves the right to request additional documentation as part of its coverage determination process. The Company may deny reimbursement when it has determined that the services performed were not medically necessary, investigational or experimental, not within the scope of benefits afforded to the member, and/or a pattern of billing or other practice has been found to be either inappropriate or excessive. Additional documentation supporting medical necessity for the services provided must be made available upon request to the Company. Documentation requested may include patient records, test results, and/or credentials of the provider ordering or performing a service. The Company also reserves the right to modify, revise, change, apply, and interpret this policy at its sole discretion, and the exercise of this discretion shall be final and binding.

NOTE: After reviewing the relevant documentation, the Company reserves the right to apply this policy to the service, or procedure, supply, product, or accommodation performed or furnished regardless of how the service, or procedure, supply, product, or accommodation was coded by the Provider.

Approval or clearance by the U.S. Food and Drug Administration alone is not a basis for coverage.

Coverage may differ for Medicare Advantage plan members; please see any applicable national and/or local coverage determinations for details. This information may be available at the Centers for Medicare & Medicaid Services (CMS) website.

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Sources of Information:

- Aubin C-E, Clin J, Rawlinson J. (2018). Biomechanical simulations of costo-vertebral and anterior vertebral body tethers for the fusionless treatment of pediatric scoliosis. *J Orthop Res.*, *36*(1):254-264.
- Bizzoca D, Piazzolla A, Moretti L, Vicenti G, Moretti B, Solarino G. (2022). Anterior vertebral body tethering for idiopathic scoliosis in growing children: A systematic review. *World J Orthop*, *13*(5):481–493.
- Boudissa M, Eid A, Bourgeois E, Griffet J, Courvoisier A. (2017). Early outcomes of spinal growth tethering for idiopathic scoliosis with a novel device: a prospective study with 2 years of follow-up. *Childs Nerv System.*, *33*(5):813-818.
- Cobetto N, Aubin C-E, Parent S. (2018). Surgical planning and follow-up of anterior vertebral body growth modulation in pediatric idiopathic scoliosis using a patient-specific finite element model integrating growth modulation. *Spine Deform.*, 6(4):344-350.
- Cobetto N, Parent S, Aubin C-E. (2018). 3D correction over 2 years with anterior vertebral body growth modulation: a finite element analysis of screw positioning, cable tensioning and postoperative functional activities. *Clin Biomech (Bristol, Avon).*, *51*:26-33.
- Cobetto N, Aubin C-E, Parent S. (2020). Anterior vertebral body growth modulation: assessment of the 2-year predictive capability of a patient-specific finite-element planning tool and of the growth modulation biomechanics. *Spin (Phila Pa 1976).*, *45*(18):E1203-E1209.
- Crawford CH, Lenke LG. (2010) Growth modulation by means of anterior tethering resulting in progressive correction of juvenile idiopathic scoliosis: A case report. *J Bone Joint Surg Am.*, *92*(1):202-209.
- Cuddihy L, Danielsson AJ, Cahill PJ, Samdani AF, Grewal H, Richmond JM, ... Betz RR. (2015). Vertebral body stapling versus bracing for patients with high-risk moderate idiopathic scoliosis. *Biomed Res Int*, 2015:438452.
- Ergene G. (2019). Early-term postoperative thoracic outcomes of videothoracoscopic vertebral body tethering surgery. *Turk Gogus Kalp Damar Cerrahisi Derg.*, 27(4):526-531.
- Hammad AM, Balsano M, Ahmad AA. (2023). Vertebral body tethering: An alternative to posterior spinal fusion in idiopathic scoliosis? *Front Pediatr*, *11*:1133049.
- Hayes, Inc. (2022, April 7). Evolving Evidence Review. The Tether (Zimmer Biomet) for Skeletally Immature Patients with Progressive Idiopathic Scoliosis. Dallas, TX. Annual review April 12, 2024.
- Newton PO, Kluck DG, Saito W, Yaszay B, Bartley CE, Bastrom TP. (2018). Anterior spinal growth tethering for skeletally immature patients with scoliosis: a retrospective look two to four years postoperatively. *J Bone Joint Surg Am.*, *100*(19):1691-1697.
- Newton PO. (2020). Spinal growth tethering: indications and limits. Ann Transl Med., 8(2):27.
- Newton PO, Bartley CE, Bastrom TP, Kluck DG, Saito W, Yaszay B. (2020). Anterior spinal growth modulation in skeletally immature patients with idiopathic scoliosis: a comparison with posterior spinal fusion at 2 to 5 years postoperatively. *J Bone Joint Surg Am.*, *102*(9):769-777.
- Miyanji F, Pawelek J, Nasto LA, Parent S. (2018). A prospective, multicenter analysis of the efficacy of anterior vertebral body tethering (AVBT) in the treatment of idiopathic scoliosis. *Spine Deform*, *6*(6):820.
- Pediatric Orthopaedic Society of North America, Scoliosis Research Society. (2020). Joint SRS/POSNA Position Statement on Payor Coverage for Anterior Fusionless Scoliosis Technologies for Immature Patients with Idiopathic Scoliosis. Retrieved from: https://posna.org/POSNA/media/Documents/Position Statements/Why-Should-Insurance-Cover-AVBT-April-2020.pdf. Accessed July 08, 2024.

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- Raitio A, Syvänen J, Helenius I. (2022). Vertebral Body Tethering: Indications, Surgical Technique, and a Systematic Review of Published Results. *J Clin Med*, *11*(9):2576.
- Samdani AF, Ames RJ, Kimball JS...Betz RR. (2014). Anterior vertebral body tethering for idiopathic scoliosis: two-year results. *Spine (Phila PA 1976).*, *39*(20):1688-1693.
- Samdani AF, Ames RJ, Kimball JS..Betz RR. (2015). Anterior vertebral body tethering for immature adolescent idiopathic scoliosis: one-year results on the first 32 patients. *Eur Spin J.*, 24(7):1533-1539.
- Scherl SA, Hasley BP. (2024, March 12). Adolescent idiopathic scoliosis: management and prognosis. In UpToDate, Williams WA (Ed), UpToDate, Waltham, MA.
- Scoliosis Research Society. (2023). Vertebral body tethering (VBT) in idiopathic pediatric spinal deformity. Available at: <u>https://www.srs.org/Education/Quality-and-Safety/Informational--Position-Statements</u>. Accessed July 5, 2024.
- Vatkar A, Najjar E, Patel M, Quraishi NA. (2023). Vertebral body tethering in adolescent idiopathic scoliosis with more than 2 years of follow-up- systematic review and meta-analysis. *Eur Spine J*, *32*(9):3047–3057.
- Wong H-K, Ruis JNM, Newton PO, Liu K-PG. (2019). Non-fusion surgical correction of thoracic idiopathic scoliosis using a novel, braided vertebral body tethering device: minimum follow-up of 4 years. *JB JS Open Access.*, *4*(4):e0026.
- Yang MJ, Samdani AF, Pahys JM, Quinonez A, McGarry M, Grewal H, Hwang SW. (2023). What Happens After a Vertebral Body Tether Break? Incidence, Location, and Progression With Five-year Follow-up. *Spine (Phila Pa 1976)*, *48*(11):742–747.

Applicable Code(s):	
CPT:	0656T, 0657T, 0790T, 22836, 22837, 22838, 22899
HCPCS:	
ICD10 Procedure Codes:	0PH404Z, 0PH434Z, 0PH444Z,0QH004Z, 0QH034Z, 0QH044Z

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